

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Modernizing the E-rate Program for Schools and) WC Docket No. 13-184
Libraries)
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To: The Commission

COMMENTS OF CTIA – THE WIRELESS ASSOCIATION®

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CTIA – The Wireless Association® (“CTIA”) presents these comments on modernizing the E-rate program to ensure that schools and libraries have access to the technology they need to provide students with the most current educational opportunities.¹

I. INTRODUCTION AND SUMMARY

Mobile broadband is a central component of the connected digital learning experience that the Federal Communications Commission (“FCC or “Commission”) seeks to facilitate with the NPRM. The Commission should ensure that mobile broadband is an available option to school administrators in a modernized E-rate program. First, building on the pilot program’s success, the Commission should modify the E-rate rules to allow the off-campus use of mobile broadband for educational purposes. Second, the Commission also should avoid any rules that would artificially constrain educators’ broadband technology choices. More broadly, and consistent with Section 254 and long-standing FCC practice, E-rate should remain a

¹ *Modernizing the E-rate Program for Schools and Libraries*, WC Docket No. 13-184, Notice of Proposed Rulemaking, FCC 13-100 (rel. July 23, 2013) (“NPRM”).

technology-neutral program, leaving technology choices to educators who understand their own needs.

The Commission should ensure that E-rate funds are used economically. In revising its rules in this regard, the Commission should take account of the competitive wireless market, with generally uniform national pricing, in determining whether such rules, including the lowest corresponding price rule, are necessary with respect to wireless services, given the institutional factors that ensure the cost-effectiveness of wireless pricing.

The Commission also has sought comment on the appropriate levels of funding for the E-rate program. Before the Commission can consider the adequacy of current E-rate funding levels, the Commission should collect additional information about schools' and libraries' broadband needs and current ability to obtain those services.

Mobility expands learning well beyond the classroom, ensuring students can work at home, on the bus, and wherever they decide to study. For this reason, the use of mobile broadband in E-rate was a specific recommendation of the National Broadband Plan and a key recommendation of the task force on implementing the President's challenge to make digital textbooks available to students. The Commission's Education Deployed Ubiquitously ("EDU 2011") pilot program also demonstrated the value of mobile broadband in expanding learning beyond the classroom. Accordingly, the Commission should carefully consider the accessibility to, and ubiquity of, mobile broadband technology and the important role it plays in advancing our nation's education goals.

II. MOBILITY IS A CENTRAL FEATURE OF CONNECTED DIGITAL LEARNING

As the Commission noted in the National Broadband Plan, “Online educational systems are rapidly taking learning outside the classroom.”² A committee of stakeholders convened by the Commission and the Department of Education noted that “digital learning cannot only happen at school. To accomplish truly ubiquitous learning, students must be able to connect outside the school walls,” and “the primary means of achieving universal connectivity outside of the school or home is through mobile broadband.”³

Mobile broadband is central to the successful deployment of digital textbooks. Following up on the President’s call in his 2011 State of the Union address, Secretary of Education Arne Duncan and former FCC Chairman Julius Genachowski in early 2012 called for all U.S. students to use digital textbooks by 2017.⁴ They then convened a committee of stakeholders to formulate a “playbook” to reach this goal; as noted above, the committee concluded that connectivity outside of school was central to that goal and that mobile broadband is the “primary means” to achieve such connectivity.⁵

Mobile broadband facilitates connected learning in other ways as well. Innumerable mobile apps have been developed to enable and enrich education, ranging from elementary

² National Broadband Plan at 254.

³ The Digital Textbook Collaborative, DIGITAL TEXTBOOK PLAYBOOK (Feb. 1, 2012) at 30 (available at http://transition.fcc.gov/files/Digital_Textbook_Playbook.pdf) (“DIGITAL TEXTBOOK PLAYBOOK”).

⁴ See, e.g., “Remarks by Chairman Genachowski and Digital Education Leaders on National Adoption of Digital Textbooks” (March 29, 2012), available at <http://www.fcc.gov/events/remarks-chairman-genachowski-and-digital-education-leaders-national-adoption-digital-textbook>).

⁵ DIGITAL TEXTBOOK PLAYBOOK at 30.

school state history quizzes to simulated pre-med anatomical dissections. For example, the app “Virtual History Roma” allows students to tour 3D models of the structures of ancient Rome while learning the history of the city through maps, timelines, video, and other interactive multimedia features.⁶ The “Star Chart” app brings astronomy instruction to life by turning students’ smartphones into virtual observatories, providing extensive information about stars, planets, or constellations, and allowing students to obtain a “close look” at objects in the night sky without an expensive telescope.⁷ In addition to providing educational content, mobile apps can also assist with the educational process, for example by helping students and teachers manage projects, deadlines, and schedules.⁸

Mobile devices also allow educational content and learning techniques to be individualized to students’ needs and learning styles; increase student interaction and engagement in lessons; and increase feedback to improve educational efficacy.⁹

There are numerous concrete examples of mobile broadband and mobile devices improving educational outcomes. For example, in North Carolina a partnership between the Department of Public Instruction and Qualcomm, called Project K-Nect, provided ninth grade students with smartphones loaded with content aligned with their teachers’ lesson plans for first-year algebra. Using the devices, students were able to learn both inside and outside the classroom, and in a more collaborative and focused way. After two years of the program,

⁶ See <https://itunes.apple.com/us/app/virtual-history-roma/id410358487?mt=8>.

⁷ See <https://play.google.com/store/apps/details?id=com.escapistgames.starchart&hl=en>.

⁸ Examples of these apps include “My Study Life,” available at <https://www.mystudylife.com/>, and “Teacher Aid PRO,” available at <https://play.google.com/store/apps/details?id=com.glen.apps.TeacherAidePro&hl=en>.

⁹ For a demonstration of the benefits of mobile technology in the classroom, see “CTIA Visits a Leader of Mobile Education in the Classroom,” available at <http://youtu.be/Ft4jPJpcG3g>.

participating students achieved test scores that were 30 percent higher on average than those of non-participating students.¹⁰

Similarly, when one carrier provided smartphones and mobile broadband service to an elementary school class in Ohio, teachers were able to use the devices in a variety of ways to enhance the learning experience. On a field trip to a museum, students took pictures of exhibits, then uploaded them to a school website and composed commentary while in the museum and on the bus ride home. The teacher then graded the assignments and provided feedback online. In addition to enjoying a more integrated educational experience, the students who were given devices also improved their test scores in a variety of subjects.¹¹

The Commission's Education Deployed Ubiquitously ("EDU 2011")¹² pilot program appears to have demonstrated impressive results at improving student performance. According to a summary of the interim reports on most of the pilot projects,¹³ the program demonstrated significant benefits from the use of mobile broadband.¹⁴ Specifically, students and teachers using mobile broadband in the pilot program experienced benefits in:

- **Increased Student Achievement:** One school district found that participating students scored 4% higher in math and 5% higher in language arts than

¹⁰ See Qualcomm, "Education/Wireless Reach," available at www.qualcomm.com/about/citizenship/wireless-reach/projects/education.

¹¹ *St. Mary's City Schools Case Study*, Verizon, available at <http://www.smriders.net/Administration/kmench/VW-CaseStudy.pdf>.

¹² *Schools and Libraries Universal Service Support Mechanism*, CC Docket No. 02-6, Sixth Report and Order, 25 FCC Rcd 18762, 18785-87 ¶¶ 44-50 (2010) ("*Sixth Report & Order*").

¹³ The EDU 2011 participants' reports have not, to CTIA's knowledge, been made available in aggregate or summary form.

¹⁴ San Diego County Office of Education, "Summary of Interim Reports Submitted by EDU 2011 Pilot Program Schools and Libraries" (April 20, 2012) ("EDU 2011 Report Summary"), available at <http://apps.fcc.gov/ecfs/document/view?id=7021912339>.

non-participating students. Another district found that the middle school participating in the trial experienced the greatest increase in student achievement of any school in the district.¹⁵

- **Improved Assessment of Student Learning:** In one district, the EDU 2011 project was the catalyst for a total overhaul of periodic testing programs, resulting in quicker results and more productive use of teacher time. Another district used the mobile devices for instant-feedback assessments to gauge students' progress during lessons.¹⁶
- **Reduced Dropout Rates:** A school district used mobile broadband to provide online courses that enabled approximately 71 students to graduate that otherwise would not have.¹⁷
- **Increased Student Ownership of Learning:** One district reported a significant increase in student completion of a final research paper as a result of the opportunity to complete the project as a multimedia presentation using mobile broadband-connected devices.¹⁸
- **Always-On Learning Opportunities:** Mobile broadband enabled pilot programs provided rich, engaging learning opportunities to students at all times – not just when they were in the classroom, making learning “an integral part of [students’] day.”¹⁹
- **Increased Confidence in Math Abilities:** One participating district reported a 12 percentage-point increase in the proportion of students that were motivated to learn math. Students were able to use mobile devices to practice math concepts with games that were more effective than worksheets at cementing key concepts.²⁰
- **Increased Communication with Second Language Parents:** One district reported a 50% increase in digital communication from Spanish-speaking parents during the trial. Parents and staff also were able to use the service to access online translation applications to facilitate communication.²¹

¹⁵ *Id.* at 5-6.

¹⁶ *Id.* at 6.

¹⁷ *Id.* at 5.

¹⁸ *Id.* at 7.

¹⁹ *Id.*

²⁰ *Id.* at 6.

²¹ *Id.* at 7.

The broadening adoption of mobile broadband and applications in education parallels Americans' increasing reliance on mobile devices and mobile broadband to access online content. For example, mobile data traffic is expected to grow 3.4 times faster than fixed-network data traffic over the next five years.²² There is, in short, a platform shift to mobile underway, and education is part of this phenomenon. The E-rate program should not attempt to swim upstream against this strong technology- and consumer-driven current.

III. E-RATE SHOULD PROVIDE TECHNOLOGY-NEUTRAL FUNDING FOR THE MOST EFFECTIVE TECHNOLOGY TO MEET SCHOOLS' AND LIBRARIES' NEEDS

A. E-rate Should Not Artificially Constrain Educators' Technology Choices

The Commission should not make any changes to the E-rate program that would constrain educators' technology choices or limit their ability to receive E-rate funding for mobile broadband.

CTIA recognizes that the current priority rules may in some cases create artificial incentives that skew schools' broadband technology choices. While CTIA certainly does not support the inefficient use of E-rate funding, no data exists in the record to support the NPRM's bald assertions that mobile data services are "costly" relative to local area network ("LAN") solutions tied to wireline connections.²³ In fact, in some cases mobile broadband connections may be the most cost-effective way of meeting schools' and libraries' broadband needs – particularly, as discussed above, for an always-on learning environment, including off of school grounds.²⁴

²² Cisco Visual Networking Index, VNI Mobile Forecast Highlights 2012 – 2017, available at http://www.cisco.com/web/solutions/sp/vni/vni_mobile_forecast_highlight/index.html.

²³ See, e.g., NPRM at ¶ 102.

²⁴ See *supra* Sections II.A.-B.

As a result, there is no basis to prioritize any particular broadband technology above another for E-rate support.²⁵ Competitive and technological neutrality has long been a central principle of the universal service program, and should remain so.²⁶ The Commission should not abandon it to force schools into a one-size-fits-all paradigm that artificially prioritizes any particular broadband technology.

In fact, educators – not the Commission – are best positioned to determine what broadband technology will best meet their educational needs. Educators should retain the freedom to make informed technology choices within the context of the E-rate program, unconstrained by arbitrary rules favoring any particular broadband technology.²⁷

B. E-rate Should Support Mobile Broadband for Educational Purposes Off of School Property

The Commission should implement a rule enabling educators to use E-rate funding to support mobile broadband for educational purposes off of school premises. The National Broadband Plan specifically recommended that the Commission change the E-rate rules “to fund wireless connectivity to portable learning devices. Students and educators should be allowed to take these devices off campus so they can continue learning outside school hours.”²⁸ Consistent with this recommendation, the Commission in 2010 established the EDU 2011 pilot program.²⁹

²⁵ NPRM at ¶ 77.

²⁶ *See id.*

²⁷ *See, e.g.,* NPRM at ¶ 215 (discussing applicants that select mobile broadband as a priority one service in lieu of LAN connections as a priority two service because the former is more likely to receive funding).

²⁸ National Broadband Plan at 239, Rec. 11.23.

²⁹ *Sixth Report and Order*, 25 FCC Rcd at 18785-87 ¶¶ 44-50.

That program provided \$10 million in funding for 20 pilot projects to test how best to use E-rate funding to support mobile broadband to facilitate learning off of school premises.³⁰

As discussed above, the EDU 2011 pilot program amply demonstrated that mobile broadband is a significant benefit to the educational process, and proved the value of off-campus mobile broadband Internet access for educational purposes.³¹ The Notice, however, only refers to the pilot program as a one-time effort, and fails to make specific recommendations to expand or make permanent the pilot program.³² This omission runs counter to the Commission's own prior findings, the strong positive response to the pilot program, and the significant increase in demand for mobile broadband services – in general and specifically for educational use.

Building on the success of the pilot program, the Commission should codify a rule permitting educators to use E-rate funding to support mobile broadband for educational purposes off of school premises.

To ensure that students have off-campus broadband access, support for mobile broadband generally will be more cost-effective than supporting the deployment and maintenance of community WiFi hot spots for students' use at home, mentioned in the NPRM.³³ Such hot spots would require siting, backhaul, and maintenance, all of which would be costly and unnecessary expenditures of E-rate funds. Commercial providers can distribute these same costs more economically over educational, business, and residential users with their mixed-use networks. Community hot spots also are a less comprehensive solution than air cards, given that hot spots

³⁰ *E-rate Deployed Ubiquitously 2011 Pilot Program*, WC Docket No. 10-222, Order, 26 FCC Rcd 9526 (WCB 2011).

³¹ *See supra* Section II.

³² NPRM at ¶ 10.

³³ NPRM at ¶¶ 319-323.

almost certainly will not reach many students' homes or other locations where they study – particularly in rural areas.

IV. THE COMMISSION'S EFFORTS TO MAXIMIZE THE COST-EFFECTIVENESS OF E-RATE FUNDING SHOULD RECOGNIZE THE COMPETITIVE MOBILE WIRELESS MARKET

The Commission is correct to focus on ensuring that E-rate funds are used in a cost effective way.³⁴ In this regard, there are a number of institutional factors that will ensure that wireless services purchased with E-rate funds are cost effective. The Commission should recognize this in determining the appropriateness and scope of any additional safeguards.

As the Commission's own data show, the mobile wireless marketplace is vigorously competitive. Nearly 93 percent of the American population, and 56 percent of U.S. road miles, are covered by four or more wireless carriers.³⁵ Consumers have a variety of purchasing options to access these carriers' services, including carriers' own stores and websites, big-box retail stores, and dealers' websites.³⁶ Moreover, most mobile wireless carriers' pricing is nationally uniform (or, at minimum, uniform across the entire area in the country where the carrier provides service.³⁷ Thus, most wireless service prices are consistent across wide swaths of geography.

The combination of vigorously competitive pricing and nationally uniform pricing helps ensure that schools and libraries will receive the most cost-effective pricing when they purchase

³⁴ See, e.g., ¶¶ 177-223.

³⁵ *Implementation of Section 6002(b) of the Omnibus Budget Reconciliation Act of 1993; Annual Report and Analysis of Competitive Market Conditions With Respect to Mobile Wireless, Including Commercial Mobile Services*, WT Docket No. 11-186, Sixteenth Report, 28 FCC Rcd 3700, 3705 (2013) (“*Sixteenth CMRS Competition Report*”).

³⁶ *Id.* at 3853 ¶ 240.

³⁷ See, e.g., *id.* at 3799 Tbl. 19 (discussing providers' national pricing offerings).

wireless services. The Commission should bear these factors in mind in considering the need for rules to ensure that E-rate services are cost-effective.

In particular, the lowest corresponding price (“LCP”) rule may no longer be a useful means of ensuring efficient use of E-rate funds, particularly for wireless services. As the NPRM notes, CTIA and USTelecom filed a petition in 2010 urging the Commission to clarify the application of the LCP rule.³⁸ Since the LCP rule was adopted as part of the original program rules in 1997, the marketplace and technology have evolved significantly. The Commission, schools and libraries, and providers all have more experience with the mechanics of the program.

There continues to be a lack of clarity surrounding the operation of the LCP rule in the current marketplace. For example, in 2012 CTIA and USTelecom objected to USAC training materials that included controversial interpretations of the LCP rule, including to purchases from state master contracts.³⁹ The Commission has not clarified these issues in the intervening time. CTIA suggests that the Commission’s review should include consideration of whether the rule is needed with respect to wireless services, given the institutional factors that ensure the cost-effectiveness of wireless pricing.

³⁸ NPRM at ¶ 210, citing *Wireline Competition Bureau Seeks Comment on Petition of United States Telecom Association and CTIA – The Wireless Association® for Declaratory Ruling Clarifying Certain Aspects of the “Lowest Corresponding Price” Requirement of the Schools and Libraries Universal Service Program*, CC Docket No. 02-6, Public Notice, 25 FCC Rcd 3662 (Wireline Comp. Bur. 2010); *Petition by United States Telecom Association and CTIA – The Wireless Association® for Declaratory Ruling Clarifying Certain Aspects of the “Lowest Corresponding Price” Obligation of the Schools and Libraries Universal Service Program*, WC Docket No. 02-6 (filed Mar. 19, 2010) (“CTIA/USTelecom Petition”).

³⁹ See, e.g., Letter from Scott K. Bergmann, CTIA, and David B. Cohen, USTelecom, to Marlene H. Dortch, FCC, CC Docket No. 02-6 (filed July 10, 2012); Letter from Scott K. Bergmann, CTIA, and David B. Cohen, USTelecom, to Marlene H. Dortch, FCC, CC Docket No. 02-6 (filed Oct. 22, 2012).

V. THE COMMISSION SHOULD COLLECT INFORMATION ABOUT SCHOOLS' AND LIBRARIES' CURRENT BROADBAND SERVICES AND NEEDS

It is premature to evaluate whether there is any need to augment or expand funding of the E-rate program. The E-rate program has provided billions of dollars in support over the years and any expansion should be based on a clear and verifiable evidence of inadequate funding. Specifically, in order to determine the amount of funding needed to bring the benefits of digital learning to America's students,⁴⁰ the Commission will need to collect more data about schools' and libraries' broadband needs, and about the services they currently are able to access. While the NPRM mentions anecdotal information about both of these topics,⁴¹ insufficient factual data are available to draw any firm conclusions.

Consideration of potential changes to the overall size of the E-rate fund must be based on clear data regarding schools' and libraries' (1) broadband needs to meet their educational goals and (2) current ability to obtain services under the E-rate program. The Wireline Competition Bureau recently sought comment on revisions to the E-rate forms, including the addition of new data collections regarding schools' and libraries' current broadband purchasing as well as their needs.⁴² These data collections, once approved and implemented, should provide additional data regarding schools' and libraries' current broadband connectivity. The Commission also should consider collecting additional information from schools and libraries regarding their broadband

⁴⁰ NPRM at ¶¶ 172-175.

⁴¹ See, e.g., NPRM at ¶¶ 5-6, 63-64.

⁴² *Wireline Competition Bureau Seeks Comment on Revisions to FCC Forms 470 and 471*, CC Docket No. 02-6, Public Notice, DA 13-1590 (rel. July 17, 2013); *Wireline Competition Bureau Seeks Comment on Revisions to FCC Forms 472, 473, and 474*, CC Docket No. 02-6, Public Notice, DA 13-363 (rel. March 8, 2013).

needs to meet their educational goals. Once this information has been collected, it will be possible to assess whether any changes to E-rate funding levels are necessary.

VI. CONCLUSION

The Commission should update the E-rate rules to ensure that schools and libraries are able to purchase the services they need to deploy 21st century digital learning technology. Mobile broadband is an integral part of this new paradigm. CTIA urges the Commission to implement E-rate reform consistent with these comments.

Respectfully submitted,

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